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NOTICE OF ALLOWANCE AND FEE(S) DUE

7055 7590 03/24/2008
GREENBLUM & BERNSTEIN, P.L.C.
1950 ROLAND CLARKE PLACE
RESTON, VA 20191

EXAMINER	
NGUYEN, TU T	
ART UNIT	PAPER NUMBER

2886
DATE MAILED: 03/24/2008

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,904	10/28/2003	Yoshinori Nakajima	P24496	3940

TITLE OF INVENTION: REFRACTOMETER

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$720	\$300	\$0	\$1020	06/24/2008

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE** OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
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INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

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Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

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nonprovisional	YES	\$720	\$300	\$0	\$1020	06/24/2008

EXAMINER	ART UNIT	CLASS-SUBCLASS
NGUYEN, TU T	2886	356-128000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB-122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB-47; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____ Date _____
 Typed or printed name _____ Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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7055	7590	03/24/2008	EXAMINER	
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Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 442 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 442 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability

Application No.

10/693,904

Examiner

Tu T. Nguyen

Applicant(s)

NAKAJIMA ET AL

Art Unit

2886

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 03/13/2008.
2. ☒ The allowed claim(s) is/are 1-4, 11-13 and 16-21.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date ____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date ____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other ____.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with William Pieprz on 03/13/2008.

The application has been amended as follows:

Please replace all the claims with the following:

1. (Currently amended) A refractometer for measuring refractive index of a sample, comprising:
 - a prism having an interface surface for contacting said sample;
 - a light source configured to radiate light so that the light enters the prism through an entrance face of said prism and irradiates said interface surface; ~~and~~
 - a photoelectric sensor configured to measure a luminous energy distribution of light reflected from said interface surface through an exit face of said ~~prism~~;prism; and

a slit extending in a direction parallel to said interface surface and said entrance face of said prism, the slit being arranged between said light source and said entrance face of said prism;

wherein only said prism and said slit are provided in an optical path between said light source and said photoelectric sensor, and

wherein said light source and said photoelectric sensor are ~~attached~~ adjacent to said entrance face and exit face of said prism, respectively.

2. (Previously Presented) A refractometer according to claim 1, wherein said light source includes a flat light emitting face, said flat light emitting face being adhered to said entrance face of said prism.

3. (Previously Presented) A refractometer according to claim 1, wherein said photoelectric sensor adheres to said exit face of said prism.

4. (Previously Presented) A refractometer according to claim 1, further comprising:
a slit extending in a direction perpendicular to a plane-of-incidence, the slit being arranged between said light source and said entrance face of said prism.

Claims 5-10 (Cancelled)

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11. (Previously Presented) A refractometer, comprising:

a frame having an opening;

a prism arranged in said opening and having an interface surface, the interface surface being providable with a sample;

a light source configured to radiate light to said interface surface; and

a sensor configured to receive light reflected from said interface surface,

wherein said frame includes a sample guide face provided at a perimeter of the opening and surrounding said interface surface,

wherein said sample guide face includes a coating, the coating comprising a material including nickel and particles of fluorocarbon polymer evenly distributed,

wherein said fluorocarbon polymer comprises polytetrafluoroethylene,

wherein said material comprises approximately 20-26 vol% fluorocarbon polymer,

wherein a diameter of said particles of said fluorocarbon polymer is approximately 0.2-0.3 μm , and

wherein said coating is formed using electroless plating processes.

12. (Previously Presented) A refractometer, in which light is radiated from a light source to an interface surface of a prism, for measuring a refractive index of a sample provided on the interface surface of the prism, on a basis of a signal output from a photoelectric sensor that detects light reflected from said interface surface, the refractometer comprising:

a filter arranged between said interface surface and said photoelectric sensor, wherein said filter comprises:

a wavelength filter configured to selectively allow transmission of light having a wavelength within a prescribed region, including wavelengths of light of said light source; and

a polarizer configured to selectively allow transmission of linearly polarized light, wherein said filter is formed as one integrated body, laminating said wavelength filter and said polarizer to each other.

13. (Previously Presented) A refractometer according to claim 12, wherein said wavelength filter comprises:

a first wavelength filter configured to selectively block light having wavelengths within a region ranging from a wavelength 50 nm longer than a wavelength of the light from said light source up to a maximum wavelength detectable by said photoelectric sensor; and

a second wavelength filter configured to selectively block light having wavelengths within a region ranging from a wavelength 30 nm shorter than a wavelength of the light from said light source down to a minimum wavelength detectable by said photoelectric sensor.

14. (Canceled)

15. (Canceled)

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16. (Previously Presented) A refractometer according to claim 12, wherein said filter comprises:

a first face that adheres to said prism; and

a second face that adheres to said photoelectric sensor.

17. (Previously Presented) A refractometer according to claim 12, wherein said filter comprises a light reducing filter.

18. (Previously Presented) A refractometer, comprising:

a prism having an interface surface, the interface surface being providable with a sample;

a light source configured to radiate light to said interface surface;

a photoelectric sensor configured to receive light reflected from said interface surface;

a comparator configured to compare a luminous energy value measured by said photoelectric sensor when said light source is not radiating with a tolerance value;

a display configured to display an error when said luminous energy value is greater than said tolerance value;

a controller configured to control said light source to radiate light when said luminous energy value is less than said tolerance value; and

a refractive index calculator configured to calculate a refractive index from a luminous energy distribution measured by said photoelectric sensor when said light source is radiating.

19. (Previously Presented) A refractometer according to claim 18, wherein said display displays said refractive index.

20. (Previously Presented) A method for calculating a refractive index using a refractometer comprising a prism having an interface surface, a light source that radiates light to the interface surface and a photoelectric sensor for receiving light reflected from the interface surface, the method comprising:

measuring a luminous energy distribution using the photoelectric sensor when the light source is not radiating;

comparing the measured luminous energy with a tolerance value;

displaying an error when the measured luminous energy is greater than the tolerance value;

controlling the light source to radiate light and measuring the luminous energy distribution using the photoelectric sensor when the measured luminous energy is less than the tolerance value; and

calculating a refractive index from a luminous energy distribution measured when the light source is not radiating.

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21. (Currently Amended) A refractometer for measuring a refractive index of a sample, comprising:

a prism having an interface surface adapted to contact said sample;

a light source configured to radiate light from an entrance face of said prism to said interface surface;

a photoelectric sensor configured to receive light reflected from said interface surface and directed outward from an exit face of said prism; and

a slit extending in a direction ~~perpendicular to a direction~~ parallel to said interface surface and said entrance face of said prism, the slit being arranged between said light source and said entrance face of said prism,

wherein only said prism and said slit are provided in an optical path between said light source and said photoelectric sensor.

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance:

As per claim 1, the prior arts of record, taken alone or in combination, fail to disclose or render obvious a photoelectric sensor configured to measure a luminous energy distribution of light reflected from said interface surface through an exit face of said prism; and a slit extending in a direction parallel to said interface surface and said entrance face of said prism, the slit being arranged between said light source and said entrance face of said prism; wherein only said prism and said slit are provided in an optical path between said light source and said photoelectric sensor, and wherein said light source and said photoelectric sensor are adjacent to said entrance face and exit face of said prism, respectively, which structurally arranged and functionally operated as claimed in claim 1.

As per claim 11, the claim is allowed for reasons as indicated in the office action mailed on 04/09/2007.

As per claim 12, the prior arts of record, taken alone or in combination, fail to disclose or render obvious a filter means arranged between the interface surface and the photoelectric sensor, wherein the filter comprises: a wavelength filter that configured to selectively allow transmission of light having a wavelength within a prescribed region, including wavelengths of light of the light source and a polarizer configured to selectively allow transmission of linearly polarized light, wherein said filter is formed as

one integrated body, laminating said wavelength filter and said polarizer to each other, which structurally arranged and functionally operated as claimed in claim 12.

As per claims 18,20, the claims are allowed for reasons as indicated in the office action mailed on 04/09/2007.

As per claim 21, the prior arts of record, taken alone or in combination, fail to disclose or render obvious a photoelectric sensor configured to receive light reflected from said interface surface and directed outward from an exit face of said prism; and a slit extending in a direction parallel to said interface surface and said entrance face of said prism, the slit being arranged between said light source and said entrance face of said prism, wherein only said prism and said slit are provided in an optical path between said light source and said photoelectric sensor, which structurally arranged and functionally operated as claimed in claim 21.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tu T. Nguyen whose telephone number is (571) 272-2424. The examiner can normally be reached on T-F 7:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur Chowdhury can be reached on (571) 272-2800 Ext. 86. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tu T. Nguyen/
Primary Examiner, Art Unit 2886
03/14/2008